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engraved in a similar manner for forming designs for the press. These plates would be more durable than glass for this use; and the design would be formed on the coating with much more facility, than by cutting or engraving the metal itself, in the usual manner. When glass plates were used for this purpose they might be strengthened by cementing metallic plates beneath them.

Patent of Mr. John Bradbury of Navan, County Meath, cotton spinner, for a method of spinning cotton, flax, and wool.

Dated Dec. 1807.

Mr. Bradbury's invention relates solely to some alterations in the spindle and fly, from which he asserts considerable advantages will arise.

The fly is placed in a reversed position on the spindle with its extremities upwards, and is fastened to a wharve, or pulley, which traverses on the spindle, and receives its motion from a drum separate from, and larger than that, which turns the spindle, the bobbin is sustained by the upper part of the spindle, which is turned smaller than the rest, so as to form a shoulder by which the bobbin is supported,

The traversing motion is effected by the rising and falling of the rail supporting the fly, or of that supporting the spindle.

The draught, or winding up of the thread, arises from the friction of the inside of the bobbin, against the small part of the spindle, and of its bottom against the shoulder of the spindle. This draught is regulated by encreasing or diminishing the size of the wharve, or of the drum, which turns the spindle, by which the spindle moves slower or quicker than the fly, or remains stationary, as the quality of the thread requires. The spindle is placed in a vertical position, as being preferable to an horizontal, or oblique one.

The following advantages are stated by Mr. Bradbury, to arise from this arrangement. First, the fly, which moves distinct from the spindle, is the only part kept in rapid motion, in this method, by which there is a saving of the force consumed in giving the same rapid motion to the spindles in the common method.

Secondly, from the same circumstance of the fly moving distinct from the spindle, the draught of the thread to the bobbin can be regulated to the utmost exactness. And, when once regulated, will remain invariably the same at whatever speed the machine shall turn; whereas in the old mode a variation of speed produces a variation of draught, which breaks the thread, and causes much waste.

Thirdly, on account of the inverted position of the fly, the bobbin can be taken off and put on with expedition; whilst in the old plan it was necessary to stop the spindle, and unscrew the fly from the top, or to take out the spindle. By these improvements the quantity of yarn produced by each spindle is nearly double to that, by the old plan, of any degree of fineness required with the same power.

Remarks....The quantity of motion saved, for a single spindle in this method may seem inconsiderable, yet in a large factory it would amount to a considerable sum, and enable the first mover to perform more work in a proportional quantity. Thus a steam engine, or a water wheel, capable of working two thousand spindles in the common plan, might in Mr. Bradbury's work 2,250 or more. The facility of taking off the bobbin has an advantage, not mentioned by Mr. Bradbury, in saving wear and tear of the machinery which must more or less occur in the old method in unscrewing and screwing on again the flies, as frequently as is required in shifting the bobbins.

The modes of regulating the proportional speed of the fly to that of the bobbin to so great a nicety, must also be of considerable importance, particularly for fine work, in which waste is more injurious.

We are informed by a skilful cotton manufacturer, that he has seen this arrangement of the fly and spindle, several years before the date of this patent.